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| 10/717,028 | 11/18/2003 | Bo Li | H9930-0305 | 7345 |

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| EXAMINER | |
|---|---|
| JOHNSON, CONNIE P | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/717,028 | LI ET AL. | |
| | Examiner | Art Unit | |
| | Connie P. Johnson | 1752 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,3-43,45,47,49,51,53 and 55-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-43,45,47,49,51,53,55-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. The remarks and amendment filed 5/9/2007 have been entered and fully considered.

2. Claims 1, 3-43, 45, 47, 49, 51, 53, 55-58 are pending.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 3-22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 39, 41-43, 45, 47, 49, 51, 53, 55-58 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 9-20 and 22-29 of Kennedy et al., U.S. Patent No. 6956097 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and the patent contain an absorbing compound, an inorganic compound and a material modification agent.

5. Claims 1, 3-22, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 39, 41-43, 45, 47, 49, 51, 53, 55-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Kennedy et al., U.S. Patent No. 6,956,097 B2.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Kennedy teaches an anti-reflective coating composition comprising a siloxane polymer and an organic absorbing compound (col. 2, line 62 and col. 3, line 3). The composition also comprises organic dyes that absorb in the range of 375nm to 260nm with a 10nm wide width range. The chromophores of the organic dyes comprise 1 to three benzene rings that may or may not be fused (col. 3, lines 28-37). The reactive groups attached to the chromophores in the organic dyes are hydroxyl, amine, carboxylic acid and substituted silyl groups (col. 3, lines 37-42). The organic absorbing compounds include 9-anthracene carboxylic acid, 9-anthracene methanol, alizarin, quinizarin and primuline (col. 3, lines 45-55). A method of forming an absorbing material includes forming a mixture comprising tetrabutylammonium chloride as the phase transfer catalyst (col. 8, line 3). The tetrabutylammonium chloride as a phase transfer catalyst meets the limitations of an adhesion promoter according to applicant's specification (see specification, page 21). The composition also comprises silane reactants including phenyltriethoxysilane (col. 6, line 59). The composition may also

comprise silanes with terminating monomer units, such as tetraethoxysilane (col. 6, line 55). The tetraethoxysilane also meets the limitations of a capping agent. In example 1, Kennedy also teaches the method of forming an absorbing spin-on-glass composition with 9-anthracene carboxy-methyl triethoxysilane, nitric acid and water combined, followed by adding butanol, propanol, acetone, ethanol, water and FC-430. The resulting solution was baked to form a coating material. The composition may also comprise high boiling solvents, such as ethyl lactate and propylene glycol propyl ether to decrease the probability of forming bubble film defects (col. 7, lines 29-33).

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 7, 11, 12, 13, 16, 17, 18, 19, 20, 21, 26, 29, 30, 31, 32, 33, 41 and 42 are rejected under 35 U.S.C. 102(e) as being unpatentable by Ravichandran et al., U.S. Patent No. 6,677,392 B2.

Ravichandran et al. teaches an absorbing composition consisting of an inorganic compound, an absorbing compound and a material modification agent (Column 9, lines 50-59 and column 10, lines 55-67). The viscosity improvers, light stabilizers, biocides

and antistatic agents meet the limitations of material modifiers (col. 10, lines 56-60). The absorbing compounds include an epoxy carboxy resin and a silane modified acrylic melamine (column 10, line 9) as claimed in instant claim 7. In addition, when water-soluble, water miscible or water dispersible coatings are preferred, ammonium salts of acid groups present in the resin are formed. For example, a powder coating composition can be prepared by reacting glycidyl methacrylate with selected alcohol components (column 23, lines 49-53). The adhesion promoter may comprise an amine base (column 19, lines 43-49), ammonium and an amine salt as in instant claims 19, 20 and 21 (column 23, lines 49-62). Ravichandran et al. also teaches silicon oxide as an inorganic compound used in combination with polysiloxanes and other activators and ligands as a stabilizer in the polymer composition (column 12, lines 20-41). Ravichandran et al. also teaches amines (column 19, no.9), nitrones (column 19, no. 7) and phosphites (column 19, no. 4) as stabilizers used in the composition as in instant claims 16, 17, 18 and 19. In reference to claims 29 and 30, crosslinked polymers such as phenol/formaldehyde resins and epoxy acrylates are also used as stabilizers in the composition (column 14, no. 21 and 24). Ravichandran et al. teaches adhesion promoters used in polymerization includes dialkoxyalkylsilanes, trialkoxysilanes and other similar silane intermediates (column 27, lines 56-61) as in instant claims 31, 32 and 33.

8. Claims 1, 34, 35 and 36 are rejected under 35 U.S.C. 102(a) as being anticipated by Leung et al., WO 03/088344 A1.

Leung et al. teaches all of the limitations of instant claim 1, including an inorganic based component at least one absorbing compound, one material modifier and a

porogen, which is selected from a group including polyalkylene oxides (page 15, lines 25-29). In reference to claim 36, a polyethylene oxide is one porogen contained in the group of polyalkylene oxides. The polyethylene oxide is disclosed at page 15, line 27 of the reference.

***Response to Arguments***

9. Applicant's arguments filed 5/9/2007 have been fully considered but they are not persuasive.

10. Applicant argues that Kennedy (6,956,097) does not teach a material modification agent.

Applicant is directed to column 8, line 3, wherein Kennedy teaches tetrabutylammonium chloride in the absorbing composition. The tetrabutylammonium chloride is an ammonium salt as referenced to in applicant's specification (see p. 21).

11. Applicant argues that the tetrabutylammonium chloride in the Kennedy reference does not act as an adhesion promoter.

Kennedy teaches tetrabutylammonium chloride (TBAC) as a phase transfer catalyst in a composition for photolithography. The composition also comprises one or more organic absorbing compounds. Although Kennedy teaches the tetrabutylammonium chloride as a phase transfer catalyst instead of an adhesion promoter does not mean that TBAC will not function as the adhesion promoter in the composition. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties

applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) (see MPEP 2112.01).

12. Applicant also argues that Kennedy does not teach a material modification agent wherein the agent is conventionally considered a poisoning agent.

~~Again~~, Applicant is arguing a limitation not set forth in the claims. Whether or not the material modification agent functions as a poisoning agent is not claimed. Kennedy teaches the same material modification agent as disclosed in applicants' specification (see applicants' specification, page 21). The fact that Kennedy does not teach the material modification agent as a poisoning agent does not change its chemical composition. Kennedy does not teach away from the instant claims. The material modification agent of Kennedy is expected to function the same as in applicants' instant invention. Further, the arrangement of the elements in the Kennedy reference is not relevant because the claims do not specify the elements in any particular order.

13. Applicant argues that Ravichandran et al. (6,677,392) does not teach a material modification agent.

Ravichandran et al. teaches a coating composition comprising amine salts in column 23. Applicant discloses that the material modification agent may be any amine salt (see page 21 of Applicant's specification).

14. Applicant also argues that the Ravichandran reference does not teach the elements of the application as arranged in the claims.

The arrangement of the elements in the prior art is not relevant since applicant does not claim the elements in any particular order in the instant application.

15. Applicant argues that Ravichandran does not teach the material modification agent as a poisoning agent in lithography.

Referencing the material modification agent as a poisoning agent is not required in the instant claims, nor does it change how the material modification agent functions in the composition. Claim 1 is not drawn to a method. Even if the material modification agent in Ravichandran is a poisoning agent, it does not teach away from the present invention.

16. Applicant argues that the nanoporous silica dielectric film of Leung is not an absorbing composition. Further, that the examiner has not specifically pointed out where Leung teaches an absorbing composition comprising at least one absorbing compound.

Applicant is directed to page 19 of Leung, wherein the reference shows that the composition may comprise pigments. Pigments are colorants, which are absorbing compounds. Therefore, Leung definitely teaches an absorbing composition.

17. Applicant argues that Leung does not teach at least one material modification agent nor at least one absorbing compound. Further, that the reference does not teach a material modification agent, wherein at least one of those agents may conventionally considered a poisoning agent in the field of photolithography.

Firstly, Leung definitely teaches material modification agents. The material modification agents comprise porogens (see Leung, page 14, line 10). The material modification agent also comprises an adhesion promoter (see Leung, page 23, line 29). Applicant teaches these compounds as suitable material modification agents in the instant specification on page 19. Second, referencing the material modification agent as

a poisoning agent is not required in the instant claims, nor does it change how the material modification agent functions in the composition. Claim 1 is not drawn to a method. Even if the material modification agent in Leung is a poisoning agent, it does not teach away from the present invention.

## *Conclusion*

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Connie P. Johnson whose telephone number is 571-272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Connie P. Johnson
Examiner
Art Unit 1752

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